

*To the Public Health Committee of the Lancashire
County Council.*

Mr. Chairman and Gentlemen,

Although small-pox has appeared in fewer districts, namely, 17 as against 20, 29, and 72 districts in the three preceding quarters, there was an increase of 55 cases as compared with the previous quarter. The monthly incidence of cases and deaths for the three months ending with March 31st last, and the second, third, and fourth quarters of 1903, is given below :—

1st Quarter.	Cases.	Deaths.	4th Quarter.	Cases.	Deaths.	3rd Quarter.	Cases.	Deaths.	2nd Quarter.	Cases.	Deaths.
1904			1903			1903			1903		
Jan. . .	43	6	Oct. . .	25	2	July. . .	63	2	April. .	173	11
Feb. . .	25	2	Nov. . .	15	2	Aug. . .	36	3	May. . .	139	5
Mar. . .	64	1	Dec. . .	37	1	Sept. . .	60	3	June. .	104	13
	132	9		77	5		159	8		416	29

It is interesting to note that 15 districts became free from infection, and 12 new districts were attacked, viz., Atherton, Billinge, Denton, Hurst, Newton-in-Makerfield, Orrell, Pemberton, Southport (B.), Upholland, Widnes (B.), Garstang (R.), and Whiston (R.).

The increase of the small-pox cases was mainly ascribed to Ashton-under-Lyne (B), with 61 cases 4 deaths, or an increase in this district alone of 41 cases and 4 deaths as compared with the previous quarter; Chadderton had 14 cases; Pemberton 10 cases, Hurst 8 cases 2 deaths, Atherton 6 cases, Gorton and Widnes (B.) 5 cases each, Southport (B.) 4 cases 2 deaths, Whiston (R.) 3 cases 1 death, Denton and Orrell 3 cases each, Billinge, Failsworth, Stretford, and Upholland 2 cases each, and Newton-in-Makerfield and Garstang (R.) 1 case each.

Further particulars of the cases which occurred in each district during the period under report are given below :—

Ashton-under-Lyne (B)...		Number of Cases.	Deaths.	Remarks.
Lyne (B)...		61	4	Twenty-two cases 4 deaths
Primary Vaccination ..	Under ten..	3	0	in January, 3 cases in
	Over " ..	38	1	February, and 36 cases
Unvaccinated ..	Under " ..	11	3	in March. All the cases
	Over " ..	9	0	were removed to the
Revaccinated (38 years ago) ..	" ..	1	..	Borough Hospital. In-

discriminate visiting was the cause of many attacks, and in two instances legal proceedings were instituted against offenders in this respect. In another case the person attacked had visited an infected house at Dukinfield, and a further case was caused by contact with an infected person at Leicester. In addition to the above, 7 cases

Number
of
Cases. Deaths.

Remarks.

were reported as small-pox which afterwards turned out to be chicken-pox. Two of the deaths took place in January amongst cases reported last quarter, and were of unvaccinated persons, aged 3 years and 3 months respectively. The third death was that of a person aged 44 years, primarily vaccinated, and the fourth was an unvaccinated person aged 8 years.

Atherton ... 6... — ... Occurred in February.

Primary Vaccination	.. Under ten..	2
"	.. Over "	2
Unvaccinated	.. Under "	1
"	.. Over "	1
Revaccinated	.. ..	0

All removed to Joint Hospital at Astley. Four cases occurred in one house, and the child first attacked was believed to have contracted the disease from another child living near. Where the latter contracted the infection could not be ascertained as she was removed to Earlestown whilst still suffering. The Medical Officer of Health of that place was notified of such removal. The child first referred to had been attending school up to the time of attack. The school was disinfected, but as two other cases occurred amongst the scholars closure for a fortnight was adopted. Placards were posted giving details as to the nature of small-pox, and advising the notification of cases of chicken-pox. To these notices are due the discovery of the later cases as the parents notified them as chicken-pox.

Billinge ... 2... — ... Occurred in March. Both

Primary Vaccination	.. Under ten..	0
"	.. Over "	1
Unvaccinated	.. Under "	0
"	.. Over "	1
Revaccinated	.. ..	0

removed to the Cottage Hospital at Crank Road. The first case was imported from Pemberton where the girl attacked worked in a mill in which several other cases had occurred. (Cases have also arisen from this source in Orrell, Pemberton, and Upholland). The second case was the mother who contracted the disease from her daughter.

	Number of		Cases.	Deaths.	Remarks.
Chadderton...	...	...	14...	— ...	Seven cases in February, and seven in March.
Primary Vaccination ..	Under ten..	0			Twelve removed to Joint Hospital at Cinder Hill, and two treated at home. All the February cases arose from one source—an unreported case. Legal proceedings were instituted and a fine inflicted. Five of the March cases occurred in one house. In another case the disease was contracted through contact with a family who visited here after having had small-pox in Glasgow — probably some article of clothing had missed disinfection. The remaining case was a person who had worn the clothing of a man who died of small-pox at the Belvedere Hospital, Glasgow.
Unvaccinated ..	Under ..	3			
Revaccinated ..	Over ..	6			
	Over ..	0			
Denton ..	...	...	3...	— ...	Occurred in January. All removed to Hospital. A brother of the patients worked in Manchester, and about two weeks previous to the appearance of the disease had a slight illness, which, from the history, seemed to have been a modified attack of small-pox.
Primary Vaccination ..	Under ten..	0			
Unvaccinated ..	Over ..	3			
Revaccinated ..	Under ..	0			
	Over ..	0			
	Over ..	0			
Failsworth...	...	...	2...	— ...	Occurred in March. Both removed to Strinesdale Hospital (Oldham). The persons attacked were mother and daughter.
Primary Vaccination ..	Under ten..	0			
Unvaccinated ..	Over ..	2			
Revaccinated ..	Under ..	0			
	Over ..	0			
	Over ..	0			
Gorton ..	...	...	5...	— ...	Four in January and 1 in March. All removed to the local small-pox Hospital. The only traceable source of the outbreak was contact with an employee of a Manchester firm who worked in the department where an outbreak occurred in the previous month.
Primary Vaccination ..	Under ten..	0			
Unvaccinated ..	Over ..	4			
Revaccinated ..	Under ..	0			
	Over ..	1			
	Over ..	0			
Hurst ...	...	...	8 ...	2 ...	Four cases 1 death in January, and 4 cases 1 death in February. All the patients were removed to Hospital (Ashton-under-Lyne). Another case was reported in February as small-pox, but which—after removal to Hospital—proved to be chicken-pox. The deaths were of persons aged 36 and 42 years, both primarily vaccinated.
Primary Vaccination ..	Under ten..	0			
Unvaccinated ..	Over ..	4			
Revaccinated ..	Under ..	2			
	Over ..	0			
	Over ..	2			
Revaccinated (after contact)	Under ..	1			

				Number of Cases. Deaths.	Remarks.
Newton-in-Makerfield				1... — ...	Occurred in January. Re-
Primary Vaccination	..	Under ten..	0		moved to small-pox
"	..	Over "	0		Hospital at Fazackerley
Unvaccinated	..	Under "	0		(Liverpool). Origin not
"	..	Over "	1		ascertained — believed
Revaccinated	..	..	0		to have received infec-
					tion from an itinerant
					hawker from Warring-
					ton.
Orrell				3... — ...	One case in February, and
Primary Vaccination	..	Under ten..	0		2 cases in March. One
"	..	Over "	3		case removed to Pem-
Unvaccinated	..	Under "	0		berton Hospital, one to
"	..	Over "	0		Upholland Hospital,
Revaccinated	..	..	0		and one treated at
					home. Infection in each
					case traced to a cotton
					mill in Pemberton.
					(Cases also occurred in
					the Billinge, Pember-
					ton, and Upholland
					Districts from the same
					source).
Pemberton				10... — ...	One occurred in January,
Primary Vaccination	..	Under ten..	0		2 in February, and 7 in
"	..	Over "	7		March. All removed
Unvaccinated	..	Under "	1		to Hospital. The in-
"	..	Over "	2		fection in the first case
Revaccinated	..	..	0		is supposed to have
					been obtained from a
					dress purchased at a
					Manchester pawnshop
					(unclaimed pledge).
					The remaining cases,
					with one exception,
					were traced to a cotton
					mill in the district.
					(Cases also occurred in
					the Billinge, Orrell, and
					Upholland Districts
					from the same source).
Southport (Borough)				4 ... 2...	One case 1 death in
Primary Vaccination	..	Under ten..	0	0	February, 3 cases 1
"	..	Over "	3	1	death in March. All
Unvaccinated	..	Under "	0	0	the cases were removed
"	..	Over "	1	1	to Hospital. One death
Revaccinated (40 years ago) ..	..	..	1	1	(March 1st) was that of
					a person, aged 40 years,
					unsuccessfully vaccin-
					ated in infancy, and the
					other (April 3rd), a
					person, aged 60 years,
					"stated to have been
					primarily vaccinated
					and also revaccinated."
Stretford				2... — ...	Occurred in January.
Primary Vaccination	..	Under ten..	0		Both removed to Hos-
"	..	Over "	2		pital (Salford).
Unvaccinated	..	Under "	0		
"	..	Over "	0		
Revaccinated	..	..	0		

				Number of Cases.	Deaths.	Remarks.
Upholland	...	...	...	2...	— ...	Occurred in March. Both isolated in temporary tent Hospital. The patients were mother and daughter — the latter working at a cotton mill in Pemberton, from which cases have also arisen in Billinge, Pemberton, and Orrell.
Primary Vaccination	..	Under ten..	0			
"	..	Over ..	2			
Unvaccinated	..	Under ..	0			
"	..	Over ..	0			
Revaccinated	..	..	0			
Widnes (B)	...	...	...	5...	-- ...	Three occurred in January, 1 in February. and 1 in March. All removed to Small-pox Hospital at Barrow Green. One case — a tramp — was found in a common lodging-house. All the inmates were vaccinated or revaccinated.
Primary Vaccination	..	Under ten..	0			
"	..	Over ..	5			
Unvaccinated	..	Under ..	0			
"	..	Over ..	0			
Revaccinated	..	..	0			
Garstang (R)	...	...	...	1...	— ...	Occurred in January. Removed to Joint Hospital at Elswick. Patient was working on the new water main beyond Garstang, and had resided at a common lodging-house in Garstang. He was removed to Hospital from the Vagrant Ward.
Primary Vaccination	..	Under ten..	0			
"	..	Over ..	1			
Unvaccinated	..	Under ..	0			
"	..	Over ..	0			
Revaccinated	..	..	0			
Whiston (R)	...	...	...	3 ...	1 ...	Two cases 1 death in January, one case in March. Two of the patients were removed to the Sanatorium, and the other was treated at home. The infection in the first case—a man, aged 46 years, unvaccinated—was obtained at the Warrington Borough Small-pox Hospital by talking to the officials. The man died after a few days illness. In the second case the disease was contracted by personal contact with a member of the family of the man above referred to.
Primary Vaccination	..	Under ten..	0		0	
"	..	Over ..	2		0	
Unvaccinated	..	Under ..	0		0	
"	..	Over ..	1		1	
Revaccinated (after contact)	..	..	1		0	
Total	...	...	...	132	...	9
Primary Vaccination	..	Under ten..	5		0	
"	..	Over ..	84		4	
Unvaccinated	..	Under ..	18		3	
"	..	Over ..	25		2	
Revaccinated	..	..	4		1	(after contact, 2 cases) (38 years ago, 1 case) (40 .. 1 case, 1 death)

SPECIAL REPORTS.

In accordance with Article 18 (16) of the Local Government Board Order, 1891, relating to the duties of Medical Officers of Health, 41 reports have been received from the undermentioned districts, and in addition 8 reports were supplied referring to small-pox. It will be observed that owing to the extensive spread of measles, public elementary schools were closed in 18 districts. Varying periods of school closure also took place in consequence of the undue spread in certain districts of scarlet fever, diphtheria, whooping cough, chicken pox, &c. :—

DISTRICT.	DATE OF REPORT	DISEASE PREVALENT.	ACTION TAKEN.
	1904		
Leigh (B.) ..	Jan. 2	Scarlet Fever ..	Lowton St. Mary's and Independents' Schools closed until Jan. 31st.
Colne (B.) ..	Jan. 4	Measles.. ..	Waterside National, Colne National, Lord Street and Primet Bridge National Schools closed for 14 days. (Report Feb. 12th) Closure of first three Schools continued until Jan. 25th, and Collingwood Street School closed for 14 days.
Church ..	Jan. 5	Measles.. ..	Closure of all Schools continued until Jan. 18th.
Clitheroe (B.)	Jan. 8	Diphtheria ..	National School closed from Jan. 11th to 25th.
Do. ..	Jan. 19	Whooping Cough	Infants' Dept. of St. James' School closed from Jan. 20th to Feb. 15th.
Oswaldtwistle	Jan. 11	Measles.. ..	St. Mary's, United Methodist, St. Paul's, Hipping Wesleyan, and St. Andrew's Schools closed for 3 weeks. (Report Mar. 14th) Infants' Dept. of Holy Trinity and St. Paul's Schools and the whole of Moscow Mill Street School closed for 14 days.
Rawtenstall (B.)	Jan. 12	Measles.. ..	Waterfoot National, Waterfoot Board, Cloughfold Board, closed in Dec. Edge-side National School closed since Christmas holidays for 3 weeks.
Gt. Harwood	Jan. 12	Measles.. ..	St. John's and St. Hubert's Schools closed from Dec. 18th to Jan. 18th, and Boys' National School from Jan. 11th to 18th.
Darwen ..	Jan. 14	Measles.. ..	Hollins Grove (Mixed) and Blackburn Road Wesleyan Schools closed until Feb. 1st. (Report Feb. 8th) Lower Chapel School closed for a fortnight. (Report Feb. 10th) Highfield Infant, Vernon Street and Duckworth Street Infant Schools closed for a fortnight. (Report Feb. 18th) Blacksnape and Highfield Schools (Mixed Dept.) closed for a fortnight. (Report Feb. 22nd) Closure of Highfield Infant and Lower Chapel Schools continued for another week.
Do. ..	Mar. 8	Measles and Whooping Cough	Infants' Dept. of thirteen Schools and the whole of Blacksnape, Vernon Street, Lower Chapel, and Hollins Grove Schools closed for 3 weeks.
Thornton ..	Jan. 19	Chicken-pox ..	During past 5 weeks 18 cases ascertained. Schools affected are Sacred Heart (Burn Naze) and the Thornton Council Schools. All precautionary measures taken.
Barton-upon-Irwell (R)	Jan. 27	Whooping Cough	Davyhulme Church Schools closed for 3 weeks from Jan. 27th.
Clayton-le-Moors	Jan. 27	Measles ..	Infants' Depts. of all Schools closed from Jan. 27 to Feb. 15. (Report Feb. 11) Mixed Depts. closed from Feb. 11 to 22. (Reports Feb. 17 and 27) closure continued until Mar. 7.
Newton-in-Makerfield	Feb. 12	Scarlet Fever ..	Wargrave District and Infants' Schools and the Vulcan Infant School closed until Feb. 29. (Report Feb. 26) closure continued until Mar. 14.
Ashton-in-Makerfield	Feb. 16	Measles ..	St. Andrew's Infant School, Garswood, closed for 3 weeks.
Walton-le-Dale	Feb. 17	Scarlatina ..	Infant Dept. of Cuerden School held at St. James' Mission Church, Lostock Hall, closed. (Report Feb. 27) St. Patrick's School, Tardygate, closed for a month.

DISTRICT.	DATE OF REPORT	DISEASE PREVALENT.	ACTION TAKEN.
	1904		
Heywood (B.)..	Feb. 19	Measles ..	Heywood Middle Class School closed from Feb. 19 to Mar. 7. (Report Mar. 21) Infants' Dept. of St. Michael's, Bamford, and Heap Bridge British Schools closed from Mar. 21 to Apl. 11. (Report Mar. 26) whole of the last two mentioned schools closed from Mar. 25 to Apl. 11. (Report Mar. 30) Heap Bridge National Schools closed from Mar. 30 to Apl. 11.
Westhoughton	Feb. 22	....	Fourgates School closed during repairs to drains on account of the danger of disease.
Hindley ..	Feb. 29	Measles.. ..	Infants' Depts. of All Saints' and St. Peter's Schools closed for 3 weeks.
Do. ..	Mar. 21	Measles and Whooping Cough	Infants' Dept. of St. Nathaniel's School closed.
Preston (R.)..	Mar. 1	Measles	Ribchester School closed for 1 month from Feb. 24th.
Milnrow ..	Mar. 14	Measles and Whooping Cough	Infants' Dept. of National School closed for 14 days.
Haydock ..	Mar. 17	Measles	Blackbrook British (Mixed) and Blackbrook New (Infant) Schools closed for 3 weeks from Mar. 18th.
West Lancashire (R.)	Mar. 17	Mumps	Christ Church Schools, Aughton, closed from Feb. 24th to Mar. 14th.
Heaton Norris	Mar. 22	Measles	St. John's School, Heaton Mersey, and St. Thomas' School, Heaton Chapel, closed for 3½ weeks from Mar. 22nd.
Litherland ..	Mar. 23	Measles	Infants' Dept. of Lander Road Schools closed from Mar. 16th to Apl. 11th.
Upholland ..	Mar. 25	Measles	Schools at Crawford Village closed for 3 weeks from Mar. 24th.

ANTHRAX.

A special report has been received respecting the occurrence of two cases of anthrax at Levenshulme. This is a disease which is peculiar to the lower animals, and may be transmitted to man by inoculation. Those employed in knackers' yards, butchers, and persons who handle the skins, wool, or hair of dead animals are liable to become infected, and they suffer, as a rule, from what is known as malignant pustule—a form of Anthrax.

In this outbreak the disease, although at first not recognised, attacked a two-year-old heifer on a certain farm in Levenshulme, on the 23rd February last; as it did not improve the farmer killed the animal, and it was dressed for human food by a journeyman butcher named Wm. Cresswell. The carcass was purchased for a small sum (£4 10s.), and removed to a shop where it was sold to the public.

On March 2nd the farmer became ill with swelling of the right forearm, which, extending from the hand up to the shoulder, subsequently became hard and œdematous. Dr. Edlin, Medical Officer of Health, states that "on the back of the forearm was a raised dry scab or pustule, the point of inoculation, with a few small vesicles around it; on the back of the wrist and also below the elbow were several large blisters containing dark bloody serum which exuded freely, and in several places the surface was raw." Death took place on the 7th March.

The second case was that of the man who dressed the animal. The nature of the illness being diagnosed as anthrax, March 5th; he was afterwards admitted to Monsall Hospital, and has made a satisfactory recovery. In this case the lower lip and right forearm were affected. In both cases Prof. Delépine examined swabs of the pustular serum and found the anthrax bacilli.

A bacteriological examination was made by Prof. Delépine of tongues and other meat in pickle which had been taken from the butcher's shop; he found in one of the tongues anthrax bacilli living and capable of rapid growth, and numerous anthrax bacilli were also present in the brine. When the cases of human anthrax were made known the, police, in the execution of their duties under the Order of the Board of Agriculture relating to Anthrax, thoroughly disinfected the shippens, farm premises, &c.

The local officials took prompt measures for protecting the public health, including (a) the prohibition of the sale of milk from the infected farm until satisfied that the cows were free from disease, (b) destruction of infected tongue and brine, and (c) disinfection of room and contents and destruction of part of the bedding.

On March 23rd the butcher, who purchased the diseased animal, was prosecuted by the Levenshulme District Council and fined £10 and costs.

I am pleased to observe from a letter received from the Local Government Board, March 10th, 1904, that further consideration has been given to the question of providing a proper supply of water to the Townships of Nateby, Pilling, and Winmarleigh, in the Rural District of Garstang, the Township of Cockerham in the Rural District of Lancaster, and the Urban District of Preesall-with-Hackinsall.

The Board have written to each of the interested Councils, and also to the Fylde Water Board and County Council, to say that they are anxious that the provision of a supply of water to these places should be ensured without further delay, and as the whole of the Authorities concerned no doubt share the Board's view in this respect "it occurs to the Board that possibly a way out of the difficulty between the Water Board and the District Councils might be found if there was a Conference between representatives of of these bodies, at which the Board would be happy to arrange for the attendance of one of their Inspectors." I trust that this last effort may be attended with success.

Since your last meeting the Secretary of State has forwarded to the Council copies of valuable Reports now placed before you on the subject of the miners' disease known as "Ankylostomiasis." It is feared that, unless proper precautions are observed by mine owners, the disease may extend to other mines of this Country besides those which are already infected in Cornwall.

In the official letter accompanying the printed documents it is suggested that "the chief precaution against the spread of the disease is the prevention of the pollution of the mines underground by human excrement, and the Secretary of State is anxious that every possible step should be taken to impress on the men employed in the mines the importance of this point and the danger which may result to themselves and others from uncleanness or carelessness on their part. . . . It would be quite contrary to cleanliness and good order that the reckless deposition of faecal matter should be common in the streets, and it seems equally undesirable that it should be permitted in frequented parts of mines." It is also suggested that "County Councils of Mining Counties might with advantage bring the matter—as opportunities may present themselves locally — before the miners and others engaged in the industry: for example, in connection with any classes on mining which may be arranged; and it is important that facilities should be readily available in each district for the examination of faeces with a view to the early detection of the disease in any mine where its existence is suspected."

In a Memorandum issued by the Home Office, suggestions for facilitating the discovery of the disease are offered "for the consideration of Inspectors of Mines, of Medical Men, and others." Unfortunately no competent person is named whose duty it will be to see that proper sanitary appliances are provided by mine owners for the reception of faecal matter, and until such provision is made, miners cannot be expected at all times to avoid causing dangerous pollutions in parts of mines "contrary to cleanliness and good order." As the law now stands, coal mines are exempted from inspection by Sanitary Authorities, and their officials have no power of entry in case of nuisance or where it is known that sanitary regulations for safeguarding the health of the employees are neglected. Until such power is given I fail to see how precautionary measures for preventing the spread of disease can be effectively taken.

Appended to this Report is a statement showing results of prosecutions initiated under "The Sale of Food and Drugs Acts," many of which I attended for the purpose of giving evidence; also Special Reports on the prevalence of Diphtheria in the Urban District of Ulverston, and on the Pollution of the River Lune.

Yours obediently,

EDWARD SERGEANT,

County Medical Officer of Health.

Preston, April 21st, 1904.

SALE OF FOOD AND DRUGS ACTS, 1875 TO 1899.

PROSECUTIONS DURING THE QUARTER ENDED 31ST MARCH, 1904.

Court and Date of Prosecution.		Nature of Sample.	Nature of Adulterant or Offence.	Name and Address of Vendor.	Result of Prosecution.
Radcliffe,	1904. 4th January	Butter (false warranty)	Water in excess; amount present 19·3 per cent.	Little & Co., 84, Corporation Street, Manchester	Case dismissed. Defendants producing warranty from merchants in Ireland. (See case 30th November)
Rochdale,	6th January	White Pepper	Upwards of 8 per cent. Ground Olive Stones	The Newhey Co-operative Society, Ltd., Newhey, Milnrow	Case dismissed. Defendants produced warranty from Messrs. S. & J. Richardson, the latter firm produced warranty from Messrs. Charles Johnson & Co., Liverpool, against whom proceedings are pending under the Merchandise Marks Act
Rochdale,	6th January	Butter	Water in excess; amount present 20·42 per cent.	Joseph Thomas Taylor, 104, Dale Street, Milnrow	£10 and costs
Rochdale,	6th January	Scotch Whiskey	28·5 degrees under proof; 3·5 below statutory limit	John Hardy, Cotton Tree Inn, Newhey, Milnrow	21s. and costs
Wigan,	15th January	Milk	Added water (16 parts per 100)	George Hogg, Pemberton	£5 and costs
Chorley,	19th January	Margarine	Non-compliance with Sec. 6, Margarine Act, 1887. (No label)	Withnell Industrial Co-operative Society, Ltd. (No. 3 Branch)	20s. and costs
Colne,	20th January	Gin	38·5 degrees under proof; 3·5 below statutory limit	Abner Brinskill Barrett, Hare & Hounds Inn, Foulridge	40s. and costs
Church,	21st January	Brandy	Flavoured Grain or Potato Spirit	Shadrack Duckworth, Wellington Inn, Henry Street, Church	40s. and costs
Church,	21st January	Brandy	Flavoured Grain or Potato Spirit	Margaret Siddle, Royal Oak, Union Road, Oswaldtwistle	40s. and costs
Church,	21st January	Brandy	Flavoured Grain or Potato Spirit	Ward Hindle Gastall, Rose and Crown, Oswaldtwistle	40s. and costs
Church,	21st January	Brandy	Flavoured Grain or Potato Spirit	Thos. Tomlinson, Bay Horse, Oswaldtwistle	40s. and costs
Church,	21st January	Brandy	Whiskey of low quality, almost entirely Grain Spirit	Thomas Smith, Printers' Arms, Union Road, Oswaldtwistle	40s. and costs
Church,	21st January	Brandy	Whiskey of low quality, containing a large proportion of Grain Spirit	Edward Duckworth, Golden Cross Inn, Oswaldtwistle	40s. and costs
Strangeways,	25th January	Strawberry Jam	3¼ grains Salicylic Acid per pound	Andrew Davidson, Heaton Norris	20s. and costs
Blackburn,	27th January	Brandy	Whiskey of low quality, containing a large proportion of Grain Spirit	Peter Tomlinson, Duckworth Hall Inn, Oswaldtwistle	40s. and costs
Blackburn,	27th January	Brandy	30·8 degrees under proof; 5·8 below statutory limit, and consists of Whiskey of low quality, containing a large proportion of Grain Spirit	John Duxbury, Knuzden Brook Inn, Oswaldtwistle	£5 and costs
Blackburn,	27th January	Brandy	Whiskey of low quality, containing a large proportion of Grain Spirit	James Gorton, Stanhill Inn, Oswaldtwistle	40s. and costs

Court and Date of Prosecution.		Nature of Sample.	Nature of Adulterant or Offence.	Name and Address of Vendor.	Result of Prosecution.
Darwen,	28th January	Brandy	Whiskey of very low quality, almost entirely Grain Spirit	Edmund Hacking, Golden Cup Inn, Darwen	To pay costs
Darwen,	28th January	Brandy	Whiskey of low quality, containing a large proportion of Grain Spirit	Mrs. Jane Whittaker, British Queen Hotel, Darwen	To pay costs
Darwen,	28th January	Brandy	Whiskey of low quality, almost entirely Grain Spirit	John Aspdon, Railway Hotel, Darwen	To pay costs
Darwen,	28th January	Brandy	Whiskey of very low quality, almost entirely Grain Spirit	Mrs. Jane Watson, Ellenshaw Inn, Darwen	To pay costs
Darwen,	28th January	Brandy	28·6 degrees under proof; 3·6 below statutory limit, and consists of Whiskey of low quality, containing a large proportion of Grain Spirit, slightly flavoured with a little Brandy	Lawrence Halliwell, Victoria Hotel, Darwen	To pay costs
Darwen,	28th January	Brandy	Whiskey of very low quality, almost entirely Grain Spirit	William Kay, Borough Hotel, Darwen	To pay costs
Darwen,	28th January	Brandy	Whiskey of low quality, almost entirely Grain Spirit	William Hy. Clarkson, Swan Inn, Darwen	To pay costs
Darwen,	28th January	Brandy	Whiskey of low quality, almost entirely Grain Spirit	Mrs. Ellen Riding, Mill Gap Hotel, Darwen	To pay costs
Darwen,	28th January	Brandy	Whiskey of low quality almost entirely Grain Spirit	Simon R. Knowles, Britannia Inn, Darwen	To pay costs
Strangeways,	29th January	White Pepper	Upwards of 15 per cent. Bleached Pepper Husks	Harrison Rutter, 26, Raby Street, Moss Side	Sample sent to Somerset House. Case Dismissed
Eccles,	1st February	Milk	Added water (17 parts per 100)	Frederick Farnworth, Peel Green Road, Eccles	£5 and costs
Ormskirk,	5th February	Brandy	Whiskey of very low quality, consisting almost entirely of Grain Spirit	Annie Roughly, Greyhound Inn, Houghton Street, Ormskirk	£5 and costs
Bolton,	8th February	Milk	Added water (5 parts per 100)	William Thompson, 114, Winter Hey Lane, Horwich	10s. and costs
Bolton,	8th February	Whiskey	33·5 degrees under proof; 8·5 below statutory limit	Eli Hamer, Globe Inn, Egerton	40s. and costs
Bolton,	8th February	Rum	34·5 degrees under proof; 9·5 below statutory limit	Eli Hamer, Globe Inn, Egerton	40s. and costs
Bolton,	8th February	Rum	34 degrees under proof; 9 below statutory limit	William Hayes, Church Hotel, Farnworth	40s. and costs
Church,	11th February	Brandy	Grain or Potato Spirit	James H. Duerden, Commercial Hotel, Church	40s. and costs
Ulverston,	18th February	Rum	27·9 degrees under proof; 2·9 below statutory limit	Mary Ann Doran, Hare and Hounds, Ulverston	20s. and costs
Standish,	24th February	Whiskey	30·8 degrees under proof; 5·8 below statutory limit	William Mason, Black Bull Hotel, Standish	£1 and costs
Eccles,	29th February	Milk	Added water (10 parts per 100)	Frederick Farnworth, Farmer, Peel Green Road, Barton	Withdrawn in Court, after conviction in previous case (See case 1st February)

Court and Date of Prosecution.	Nature of Sample.	Nature of Adulterant or Offence.	Name and Address of Vendor.	Result of Prosecution.
Bamber Bridge, 4th March	Brandy	36·3 degrees under proof; 11·3 below statutory limit. Probably contains a large proportion of spirit not derived from grapes	Thomas J. Phillipson, Queen's Inn, Walton-le-Dale	10s. and costs
Heywood, 9th March	Butter	Water in excess; amount present 21·16 per cent.	Heywood Industrial Co-operative Society, Limited, Heywood	Case dismissed. Defendant produced Warranty. Summons granted against Messrs. O'Brien & Co., Manchester. (Case to be heard 20th April)
Blackburn, 16th March	Brandy	Whiskey of low quality, containing a large proportion of Grain or Potato Spirit	John Wm. Riley, Hare and Hounds, Blackburn Road, Oswaldtwistle	40s. and costs
Blackburn, 16th March	Brandy	Whiskey of low quality, containing a large proportion of Grain or Potato Spirit	George Holding, Royal Hotel, Great Harwood	40s. and costs
Bolton, 21st March	Whiskey	28·7 degrees under proof; 3·7 below statutory limit	Thomas Stubbs, Queen's Hotel, Farnworth	10s. and costs
Shaw, 23rd March	Margarine	Non-compliance with Section 6, Margarine Act, 1887 (no label)	Ann Bradbury, 132, Manchester Rd., Shaw	5s. and costs
Shaw, 23rd March	Milk	Deficient in cream	William Townhead, Higher Rushcroft Farm, Crompton	10s. and costs
Shaw, 23rd March	Butter	Water in excess; amount present, 27·77 per cent.	James Hewitt Windle, (Trading as O'Connell & Co.), Market Street, Shaw	£1 and costs
Bury, 24th March	Elderberry Wine	Coloured, flavoured, non-alcoholic syrup, containing 5 grains Salicylic Acid per pint. No evidence of the presence of Elderberry juice	W. A. Howson, Grocer, Ramsbottom	£1 and costs
Bury, 24th March	Milk	Added water (5 parts per 100)	John Parkinson, Lower Buckley Fold Farm, Tottington	20s. and costs
Church, 31st March	Butter	Water in excess; amount present, 20·19 per cent.	Geo. Edw. Wilkinson, 284, Union Road, Oswaldtwistle	Dismissed. Defendant produced warranty
Church, 31st March	Butter	Water in excess; amount present, 22·89 per cent.	Thomas Croft, Burnley Road, Clayton-le-Moors	Dismissed. Defendant produced warranty from Messrs. Little & Co., Manchester

SUMMARY OF PROSECUTIONS.

	Legal Proceedings.	Convictions.	Withdrawn.	Dismissed on production of Warranty.	Dismissed for other reasons.	Amount of Fines (exclusive of costs).
Quarter ended—						£ s. d.
March 31st	49	42	1	*5	1	70 6 0

* Actions pending against Warrantors in 2 cases.

SPECIAL REPORT

ON THE

Prevalence of Diphtheria in Ulverston Urban District.

For the past two years diphtheria has been very prevalent in the Ulverston Urban District, and at the request of the Council I made an arrangement with Dr. Patterson, Medical Officer of Health, on the 22nd of March last, for an investigation into the circumstances of the outbreak.

Ulverston, as you are aware, is situated on the northerly part of Morecambe Bay; it has an area of 3,172 acres, and a population estimated at 10,060. The houses are built on a slope, the upper part of which is porous, composed of gravel, and the lower part clay. The district is sub-divided into five wards, viz., North, South, East, West, and Central. The sewers are arranged on the combined system; there are three lines of sewers, two discharging direct into the sea at Carter Pool, and the other discharging into subsidence tanks with overflow to sea.

Dr. Patterson reports that before the commencement of the epidemic of diphtheria the town was visited by a somewhat severe outbreak of scarlet fever, and many cases were treated in the Isolation Hospital; it is interesting to note that for four years previous to this there had been a remarkable freedom from epidemic sickness.

The diphtheria outbreak appeared to centre from a dairy farm in East Ward, where a female servant just arrived from London was, in consequence of the Isolation Hospital not being then available, treated in a harness room situated a short distance from the farm premises. The next case was a relative of the farmer who had been a constant visitor to the farm. Several cases soon appeared in various parts of the district, owing to some connection either direct or indirect with this source of infection, and diphtheria has continued more or less prevalent to the present time, not only in East Ward but in the other Wards as well.

The distribution of the disease in 1901, when diphtheria had little prevalence, and during the epidemic period 1902 to the present time, is given according to Wards in the table below:—

WARDS.	1901.	1902.	1903.	1904. (March 31st.)	Total.
North.....	1	13	24	3	41
South.....	0	17	25	10	52
East.....	1	56	15	7	79
West ..	0	14	23	15	52
Central.....	2	11	8	15	36
Total	4	111	95	50	260

In 1901 there was not a single death from diphtheria, while in 1902 there were 13 deaths, 1903, 5 deaths, and 6 deaths during the three months ending March 31st, 1904.

The ages of the children attacked are given in the following table:—

Year.	Under 6 months.	6 months to 1 year.	1 to 2 years.	2 to 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	20 and upwards	Total.
1901.....	0	0	0	1	1	0	2	0	4
1902.....	0	0	2	21	38	16	6	28	111
1903.....	1	0	1	17	37	15	12	12	95
1904 (to March 31)..	0	0	2	11	18	7	3	9	50
Total ...	1	0	5	50	94	38	23	49	260

The above shows that the incidence of attack was greater among infants from 2 to 5 and 5 to 10 years of age, being equal to 55 per cent. of the total cases. As showing the percentage of attacks among children attending the various schools I am indebted to Dr. Patterson for the table below :—

Name of School.	Average Attendance.	Number of Cases.	Percentage to Attendance.
Roman Catholic	117	26	22·2
National and Infants ...	656	65	9·9
Wesleyan	211	14	6·6
Dale Street (Board) ...	504	84	16·6
Sand Side (Board)	108	17	15·7

The attendance at school of children suffering from unrecognised diphtheria no doubt was in my opinion the most important factor in the disease distribution, and this danger was present to the mind of the Council when they authorised the schools to be closed in 1902 from October 16th to November 17th, and again from December 10th to the end of the year. There was no school closure in 1903, but it was again adopted on the 5th of March this year continuing to the 11th of April. I am informed that school closure had a marked effect in checking the spread of infection in 1902, and equally good results have been derived from the recent closure, for not a single case of diphtheria has been notified since the 25th of March last. The outbreak in question seems to be another illustration of the danger of diphtheria, when once introduced into a district, of being spread by infection conveyed to schools by children not known to be ill.

The methods of precaution which occur to me as of great importance, when diphtheria is prevalent in the district, are—

(a) The periodical examination by a medical man of the throats of all children attending school, and in any case of suspicion “swabs” of the throat secretion should be taken and submitted for examination to an experienced Bacteriologist.

(b) Means of hospital isolation should always be available, and it has been largely owing to this want that diphtheria has spread so extensively in this district.

(c) Before discharging a diphtheritic patient from the hospital, or removing quarantine restrictions when a patient is treated at home, the Authority should always be satisfied by bacteriological examination that the throat is free from the specific bacillus.

(d) Disinfection of house and clothing after the recovery, or removal to hospital, should be carefully carried out in all cases of infectious disease, and in order to do this effectually a steam disinfecter is essential. The Council have, however, no such apparatus, and are therefore not equipped as they ought to be to withstand the inroad of epidemic disease; and

(e) School closure, which it is satisfactory to observe, was adopted in 1902, and in March and April of this year.

Seeing the great amount of infectious disease contracted by young children at schools and consequent mortality, not only in this district but in all parts of the County, it is a pity that infants under the age of five years should be allowed to incur a serious risk of infection without any corresponding educational advantage.

As requested, I made an inspection of the sewerage system, but found no reason to suspect this as a cause of diphtheria, although the subsidence tanks—through which flows the sewage from the older portion of Ulverston, in addition to Lightburn Park—are not free from objection, nor is the practice of discharging into the sea crude sewage from the other two sewers.

Another requirement of the district is a destructor for getting rid of refuse matter which is now inadequately dealt with.

My attention was also directed to the milk supply, and I am of opinion that great improvements might be effected in the character of the cubic space, ventilation, and sanitary conditions of many of the district cowsheds.

The shippens belonging to the farm first affected with diphtheria were found to be far from satisfactory, more especially as regards ventilation, and I may mention that, as a precautionary measure, the sale of milk which a bacteriological examination showed to be suspicious, was stopped at the early period of the outbreak in 1902 (from Oct. 18th to Nov. 11th).

The treatment of cases of diphtheria by antitoxin has, I believe, been attended by beneficial results, and it may be observed that the Council have, during the epidemic, arranged to supply this material to local practitioners at the public expense. Bacteriological examinations of throats are also gratuitously provided for, but so far have been too sparingly taken advantage of.

In concluding my report I have pleasure in stating that every assistance was afforded me in my investigations by the Council and their officials.

EDWARD SERGEANT,

County Medical Officer of Health.

County Offices, Preston,

April 14th, 1904.

Report by the County Medical Officer of Health

ON THE

POLLUTION OF THE RIVER LUNE.

On October 16th, 1902, Petitions were presented to the County Council by the Conservators of the Lune, Wyre, Keer, and Cocker Fishery Board, and by persons engaged in the Fishing Industry residing at Bazil Point and Sunderland Point in the township of Overton, and at Glasson Dock and neighbourhood in the parishes of Thurnham and Cockersand, complaining of the polluted state of the water in the River Lune, below Skerton Weir. In these Petitions it is stated that a large quantity of untreated sewage—increasing, year by year—is being turned into the Lune by the town of Lancaster, and the petitioners claim that this is one of the chief causes of the deterioration of the Salmon Fishing, and that the health of those who fish the river and the public in general, is liable to suffer injury. It is further suggested that important mussel beds at Crook Skear and Bazil Point Weir in the estuary shown on appended map, may become, in course of time, so seriously contaminated with sewage, as to cease being the means of living relied on by the fishermen in the winter season.

Taking into consideration the interests involved and the importance now given to the question relating to the discharge of sewage into tidal waters and possible contamination of shell-fish, I have, before completing my report, availed myself of the information obtainable from bacteriology and chemistry. I have also borne in mind the fact, that in November, 1899, the Local Government Board in reply to an application from the Lune, &c., Fishery Board, asking for an Order to declare the tidal portion of the Lune to be a stream within the meaning of "The Rivers Pollution Prevention Act, 1876," stated that a sufficient case had not been made out to justify their interference.

The tidal portion of the Lune, that is, the river below Skerton Weir, receives the whole of the sewage in a crude state from over 42,000 persons residing in the town of Lancaster, as well as from the villages of Conder Green and Glasson, in the Lancaster Rural District through outlets specified in the tabulated statement given below :—

Letter on Sketch Plan.	Description of Outlet.	Diameter of outlet as far as could be ascertained	Remarks.
A	Stream passing through Lancaster Railway Carriage and Wagon Works	..	This discharges into a channel, about 40 yards long, which joins the part of the River Lune called Dalton Dam. Surface of water shows oily appearance. On the bed of the channel paper and rags are deposited, and at times mud of a slimy character lines the banks.
B	Main Sewer from Skerton (Lancaster), "Aldren's Lane"	12 inches	The outflow of sewage discolours the river for a considerable distance and allows a deposit of offensive solid matter to take place on the river bed.
C	Main Sewer from Skerton (Lancaster), "Derby Road"	12 inches	Outlet on south side of Skerton Bridge, usually covered with water gives rise to much pollution of the Old Brig Hole.
D	Main Sewer from Skerton (Lancaster), "Lune Street"	12 inches	Discharges below low water.
E	Old Mill Race, Damside Street, Lancaster	..	Conveys overflow from a small stream used by manufacturers. In time of storm is used as a relief to the sewers. Near Wagon Works, complaint of smell probably owing to warm water impregnated with oily matter discharged from hydraulic presses.
F	Main Sewer from Lancaster, "Lune Road"	24 inches	Discharge of crude sewage containing large amount of excretal matter which for a considerable distance seriously pollutes the river. The sewage becomes at times discoloured owing to admixture with trade effluents.
G	Main Sewer from Lancaster, "Willow Lane"	24 inches	Together with sewer F sewage conveyed from the populous part of Lancaster, the volume of sewage being very considerable.
H 1	Drain from Messrs. Williamson's Works	9 inches	Sewage outflow slightly oily and containing excretal matter.
H 2	Drain from Messrs. Williamson's Works	9 inches	Outflow having the appearance of ordinary domestic sewage.
H 3	Drain from Messrs. Williamson's Works	15 inches	The discharge contains a quantity of excreta, paper, &c.
I	Sewer from Lancaster Infectious Disease Hospital (Freeman's Wood)	9 inches	Effluent—untreated sewage—produced on the infected premises.
J	Main Sewer from Scotforth and Lancaster (Stodday Lane); also receiving County Asylum Sewage	27 inches	Large volume of putrefactive sewage discharged into open channel, along which it flows to river at low tides. A considerable deposit takes place in the vicinity of the outlet, offensive in character, and highly polluting to the river for some distance.
K	Main Sewer from Galgate, "Conder Green"	9 inches	The discharge—untreated sewage—is received by a stream at a point above half-a-mile away from the channel of the River Lune. In summer, when the stream is frequently almost dry, a nuisance is caused by putrifying sewage.
L	Sewer from Glasson Dock	6 inches	Effluent delivered on shore a short distance from channel of river.

The sewage of Lancaster is similar in character to that usually obtained from water-closet towns, and in addition it contains a certain amount of drainage from special manufactories established in the borough. The tabular statement above shows that the sewers marked C and D, from Derby Road and Lune Street, discharge on the bed of the river below low water, and, consequently, particulars as to the amount of flow I have not been able to ascertain; but there is evidence of considerable pollution at times taking place in the part of the river known as the Old Brig Hole. F and G are main sewers, each 24in. diameter, and drain the more densely populated portions of the town. The effect of this sewage is visible for some considerable distance down the river, both by the discolouration of the water and the quantity of faecal matter floating on the surface. At Stodday a similar effect is produced by the discharge into the river of a large volume of offensively smelling putrefactive sewage drained from the County Asylum and the Scotforth District of Lancaster. The other sewer outlets mentioned are small and in a modified way contribute to the river pollution. At certain states of the tide the sewers cease to discharge, owing to their being tide locked. In the case of F a low water outlet is provided with valve, and when this is closed by the rise of the tide an outlet at a higher level comes into operation. Sewer G is not provided with outlet valve, and I am informed, that the time during which the water covers the mouth of this sewer is equivalent to at least 3 hours during each tide, and as it is not provided with a storage tank for receiving the flow during the period of closure, the sewage is backed up in the mains, and deposition of solid matter, must of necessity, take place. When the state of the ebb-tide allows the sewage to escape, some of it is carried out to sea, but as its progress seawards takes some considerable time, a portion meeting the returning tide is conveyed up the river above the outlets of the discharging sewers, and oscillates up and down for a considerable period before finally getting out to sea. The accumulation of sewage in the river, especially during neap tides and dry seasons, will, owing to admixture with sea-water, no doubt largely account for the slimy deposit of mud on the river banks, &c., which is so much complained of by the Conservators and persons engaged in the Lune Fishery, and it is quite reasonable to assume that after heavy rain much of this material will be washed down the river, possibly to be deposited on the mussel beds at the estuary, or in other situations equally undesirable. On such occasions there is ample evidence to show that fish are choked and driven further out to sea.

When I inspected the Lune in October, 1902, and again in June and August of last year, the river banks extending from Skerton Bridge to below Stodday sewer were extensively covered with slimy estuarial deposit impregnated with sewage matter, but at the present time, owing to floods of the past few months, the sludge has been washed away and the banks are left comparatively clean.

Although it would be difficult to say that the discharge of sewage into the Lune is detrimental to the health of residents in the vicinity of the river, yet I can quite believe that persons engaged in salmon fishing—necessitating their wading in deep water—might suffer evil effects from the presence of the sewage contamination. But I may here state, that the chemical analyses, kindly undertaken by Mr. Halliwell (Ribble Watershed Department), of several samples of water obtained at Sunderland Point during various states of the tide, in August, 1903, and February this year, gave favourable results, and did not indicate the presence of appreciable sewage pollution.

The evidence afforded by Professor Delépine (Victoria University, Manchester) from his investigation of estuarial water and mud obtained from the banks of the river at various points, and by Mr. Johnstone (Fisheries Laboratory, Liverpool University), from the bacteriological examination of mussels, taken from the Lune Estuary, is more conclusive, and, in accordance with what might be expected from the topographical conditions. It will be observed from the appended report of Mr. Johnstone that the conclusion he arrives at is “that the mussels on both Crook

RIVER LUNE

FROM
SKERTON WEIR TO SUNDERLAND POINT

Red.....Sewer Outlets
Blue.....Mussel Beds



Skear and at Bazil Point (taken February 9th, 1904), are polluted by sewage matters, but that the degree of pollution is not excessive," and as a result of a further examination of mussels from Crook Skear he is able to confirm this view.

Professor Delépine states in his Report that the results of his investigations all point to considerable pollution of the River Lune as far as Bazil Point Weir and Crook Skear. The mud deposited on the banks of the River Lune gave clear evidence of faecal pollution. He suspects that some of the chemical effluents mixed with sewage which are thrown into the river may be detrimental to fish life; but so far this suspicion has not been verified by chemical analysis and certain physiological experiments on fish which have been carried out in his laboratory.

From my knowledge of the Lune, and with the information that I have been able to obtain on the subject, I find it extremely difficult to express an opinion as to whether the County Council would be justified in asking the Local Government Board to hold an Inquiry under Section 20 of the Rivers Pollution Prevention Act, although I fully believe that the present system of introducing large volumes of crude sewage into the river, may, on sanitary grounds, be considered offensive, avoidable, and likely to render harmful the shell-fish taken in the estuarial waters.

EDWARD SERGEANT,

County Medical Officer of Health.

County Offices, Preston,

April 14th, 1904.

Bacteriological Report on various Samples of Mussels from the River Lune.

Fisheries Laboratory,

University, Liverpool,

February 26th, 1904.

Two batches of mussels were received at the laboratory on February 10th, 1904—one was collected on Crook Skear on February 9th, at 12-35 noon; and the other at Bazil Point, on the same day, at 12-10 noon. They were examined immediately after receipt.

All the mussels were apparently healthy and not ill-nourished. Those from Crook Skear were about $2\frac{1}{2}$ inches long; those from Bazil Point were rather smaller.

Six mussels from each batch were examined for the bacterial contents of the stomach. Three from each batch were also examined for the bacterial contents of the water in the shell cavity.

METHODS.

I think it advisable to give some account of the methods adopted, as doubt is frequently expressed as to the accuracy of the identification of bacterial species if this is not done.

I. About $\frac{1}{10}$ c.c. of the stomach contents of each mussel were taken up by a sterile capillary pipette, and inoculated in tubes of McConkey's bile-salt broth.

II. The same quantity from each fish was also inoculated in tubes of sterile litmus milk which had been previously heated to 100° C. for half-an-hour and then rapidly cooled. The tubes were then heated to 80° C. for 15 minutes, and incubated anaerobically in an atmosphere of hydrogen.

III. A similar quantity of the stomach contents from each mussel was inoculated on the surface of Grünbaum's neutral-red, bile-salt, lactose agar.

In all cases the mussels were opened with sterile instruments. A cut was then made with a sterile knife into the stomach. A separate sterile pipette was used for each mussel. The temperature of incubation was 42° C.

RESULTS.

I. All the McConkey tubes gave the complete reaction, viz., formation of acid and gas within 24 hours.

II. All the milk tubes gave the "typical" reaction, viz., clotting, formation of gas and acid, and the complete break up of the clot, within 18 hours.

III. The neutral-red agar plates all showed abundant growth. *Bacillus coli communis* and its allies grow on these plates in a characteristic fashion and can be easily distinguished. The number of "colon-like" colonies on each plate were counted with the following results:--

		No. of "Colon-like" Colonies.	
Mussel	1 ...	General fusion of colonies	
"	2 ...	30	
"	3 ...	29	
"	4 ...	60	
"	5 ...	General fusion	
"	6 ..	General fusion	
"	7 ...	31	
"	8 ...	2	
"	9 ...	1	
"	10 ...	12	
"	11 ...	10	
"	12 ...	23	

But all the "colon-like" colonies are not produced by *B. coli communis*. It is necessary then to select representative colonies and to inoculate them on the sloping surfaces of as many tubes of nutrient agar as there are colonies selected. From each of these pure sub-cultures a tube of each of the following media:—Bile-salt broth, glucose broth, lactose broth, mannite broth, cane-sugar broth, glycerine broth, and litmus milk, is inoculated. The reactions afforded after the tubes have been incubated at 42° C. for six days, then determine whether or not the colony selected was produced by *B. coli communis*.

It will be seen that the analyses of a dozen mussels on such a scale involves some considerable time, is elaborate, and cannot be hurried.

The object of (I.) is to determine the *probable* contamination of the mussels by bacteria of intestinal origin. Practically only organisms originating in the intestines of man and animals give the complete reaction in this medium.

The object of (II.) is to determine the presence of Klein's *B. enteritidis sporogenes*.

The object of (III.) is to isolate the species of bacteria and to distinguish between bacilli of the "colon group" and those of the "typhoid-Gaertner" group.

Bacillus coli communis was isolated from mussels 3, 7, 11, and 12, and from the water in the shell of mussel 14.

B. paracolon, a microbe resembling *B.C.C.* but approximating to the typhoid bacillus in its inability to ferment lactose, was isolated from mussels 6 and 11.

The other microbes identified were *B. lactici*, *B. capsulatus* *Staphylococci*, and various aberrant organisms growing on neutral red agar as white colonies, and producing only a simple acidity in bile-salt broth.

CONCLUSIONS.

The primary reaction with bile-salt broth gave us a general indication of the faecal contamination of all the mussels examined.

The reaction in the milk tubes determined that *B. enteritidis sporogenes* was present. Dr. Klein regards the presence of this microbe as indicative of sewage contamination. It is very pathogenic to rodents, and has a probable causal relationship (in certain circumstances) to outbreaks of epidemic diarrhoea.

[But Klein has lately shewn that other microbes—*B. cadaveris sporogenes* and *B. butyricus* may produce the same reaction. These two latter microbes, however, are probably sewage organisms, and their discrimination is therefore of subsidiary importance.]

B. coli communis is generally regarded as an organism which is absent from shell-fish living in pure sea-water, and absent in all unpolluted fresh-waters. Its presence then, in quantity, is an indication of sewage pollution.

Now comparatively few of the "colon-like" colonies were examined in minute detail. It is exceedingly probable that, if all those colonies on each plate had been sub-cultured, *B.C.C.* would have formed a fair percentage of them.

It is concluded, then, that the mussels on both Crook Skear and at Bazil Point are polluted by sewage matters, but that the degree of pollution is not excessive.

JAS. JOHNSTONE.

Further Report on the Mussels from Crook Skear.

At the request of Dr. Sergeant, I made a further bacteriological examination of the mussels from the above locality. I thought it would be an advantage to visit the bed and collect the sample for analysis myself. On 16th February, therefore, Mr. Andrew Scott, from the Piel laboratory, Capt. J. Wright, and I, visited Crook Skear about the time of low water. There was distinct evidence of sewage pollution. We saw shredded paper on the sands above the Skear, none on the Skear itself, but a good deal banked up on the margins of the gutter which lies above the Skear. There had been much flood water in the river, and these evidences would probably be stronger if the Skear were visited during a dry season.

It was impossible to get to Bazil Point at the time, but a sample of mussels was taken from Crook Skear and was brought back to Liverpool, packed in a sterile tin. A sample of the shredded paper on the sands was also collected and brought away in a sterile bottle.

The material so collected was examined on the following day.

I. Six mussels were examined by the methods outlined in my former report. All of these gave the complete reactions in bile-salt broth and in litmus milk, incubated anaerobically.

II. The paper collected was also examined. Pieces were taken up by sterile forceps and stroked along the surface of neutral-red, bile-salt, lactose agar.

Three plates were thus made.

The results of these analyses are as follows :—

I. Cultures from stomach contents.

				No of "Colon-like" Colonies.
Mussel	1	...	10	
"	2	...	5	
"	3	...	15	(also several diffuse red patches)
"	4	...	6	(with some diffuse red patches)
"	5	...	14	
"	6	...	22	

Ten colonies from these six plates were selected and examined by sub-culture on the various media noted in my former report. Five of these colonies were produced by *B. coli communis*. Mussels Nos. 1, 4, 5 and 6 contained this bacillus.

II. Cultures from the paper collected.

				No. of "Colon-like" Colonies.
Plate	1	...	7	(also 3 white colonies)
"	2	...	14	(many white colonies)
"	3	...	Numerous and fused along strokes	

Plates I. and II. contained colon bacilli.

Various white colonies from the above series of plates made from the paper were sub-cultured.

None of these organisms was identified. One of them, however (from Plate 2), produced simple acidity in bile-salt broth and glucose; acidity and clotting in milk; and no reaction with lactose, mannite, cane-sugar, and glycerine. Mr. Lewis, of the Pathological Department at Liverpool, informs me that the reactions are similar to those given by a microbe, which he isolated from one of the infected army blankets, examined some time ago. This is probably a microbe of intestinal origin.

CONCLUSIONS.

This examination then confirms the former one, and confirms the results of an examination of the conditions of the mussel bed, viz. :—that there is fair evidence of sewage pollution, though this is not of an excessive degree.

JAS. JOHNSTONE.

Fisheries Laboratory,
University, Liverpool,
February 26th, 1904.

Report on Samples of Water, Soils, and Mud, Collected from the Estuary of the River Lune

*By Professor Delépine, Public Health Laboratory, Owens College,
Manchester.*

At the request of the County Medical Officer of Health, I visited with him the Estuary of the River Lune on the 8th of April.

I.
Visit to the
Lune River
Estuary.

Dr. Sergeant desired to ascertain how far the amount of pollution on the banks of the Estuary in those regions known as Crook Skear and Bazil Point Weir justified the complaints made.

We timed our visit so as to reach Crook Skear at 11 o'clock; *i.e.*, at the time when the tide was at its lowest, and the sea was beginning to return. The weather was cold, rainy, and windy; the wind blowing from the south was carrying floating objects and foam towards Bazil Point.

The sources of pollution were obvious, but to find the extent of the danger thus produced it seemed necessary to obtain data for the purpose of answering the following questions:—

II.
Scope of the
Investigation

1. Was the amount of sewage discharged in the River sufficient to produce a material pollution of the water washing its banks at the level of the Crook Skear and Bazil Point Weir mussel beds, notwithstanding the dilution following admixture with the large volume of water coming down the River, and the periodical movements of tidal water?
2. Was there an accumulation of organic matter on the banks of the River such as to justify some of the statements which had been made?

To answer these questions I found it desirable to collect specimens of water, mud, soil, and sand from various parts of the Estuary—

- a. At places where pollution seemed most likely to occur (Specimens 355, 356, 357, 358, 359, 360, 361).
- b. At a place above the chief sources of pollution (Specimen 363).
- c. At a place at the mouth of the Estuary where the sand was constantly washed by the sea, and apparently not exposed to material pollution at any time (Specimen 364).
- d. I also obtained for the purposes of comparison and experiments two samples of sewage (362 and 365). The sewage selected seemed, judging by the colouration of the River water, observed on the 8th of April, in the neighbourhood of the sewer outlet, to contain a fair amount of some industrial effluent. This discolouration of the water was not, however, observed on the 9th, when the second Specimen was collected. The investigation of these Specimens included the determination of the following data:—

1. The number of bacteria.
2. The presence or absence of bacteria, indicating faecal pollution.
3. The amount of organic matter present in estuarial sand, and in the soil forming the banks of the River.
4. The presence of any chemical compound in the sewage which might prove poisonous to fish.

III.
Description
of the
Samples
Collected.

355.—River Water. Collected in sterilised bottle, April 8th, 11-15 a.m., 14 yards from East Bank, near Crook Skear mussel bed. Tide just beginning to turn, but main stream of river water flowing along that bank (it was free from any taste of salt), very turbid. Sample taken opposite perch.

356.—River Water. Collected in sterilised bottle, April 8th, 12 o'clock. North bank of river just under Bazil Point, near upper end of Bazil Weir (mussel bed), at place where returning tide caused an eddy and backing against the sand of all scum and light material on the surface of the water. Bottle held so as to allow the scum and iridescent film on the surface to run into the bottle.

357.—Mud. Collected in sterilised tin, April 8th, 12-5 p.m., at same place as previous specimen. The mud was taken near where the sand was covered with scum.

358.—Deposit. Collected in sterilised tin, April 8th, 2 p.m. east bank, near Stodday, about 18 feet below the outlet of the Stodday sewer, half-way between high-water mark and level of water at low tide. The deposit is stratified, being composed alternately of black, charcoal-like deposit, and yellow sand. The lower edge of the deposit has been eroded, and partly covered by sand. The whole rests upon a layer of shingle, which is clean where exposed. In some parts the whole bank between high and low water mark is shingly and clean, but not near the sewer.

359.—Soil. Collected in sterilised tin, April 8th, 2-45 p.m. Eroded bank under turf, a few feet below the level of high-water mark, left bank of Lune, under Lune Mills, between sewers H2 and H3 on map. This soil looked clean, partly sandy, and mixed with root fibres from turf above. It represents nearly the natural soil, probably contaminated, owing to the vicinity of the road and floor-cloth works. Taken about 8 inches below the turf.

360.—Deposit on banks of the Lune. Collected in sterilised tin, April 8th, 2-45 p.m. About 8 feet below the level at which No. 359 was taken. Black deposit here as in No. 358.

361.—River Water. Collected in sterilised bottle, April 8th, 3 p.m. Near Bank, seven yards above Stream Outlet H from Lune Works. The discharge free at the time, containing black particles, paper, faecal matter, &c. The water had a greasy film on the surface. There was a strong smell of naphthalene or some analogous compound about the place.

The specimen collected had a moderate degree of turbidity, a slight pinkish colour, and black coarse particles floating in it. In bulk the colour was well marked, resembling that of a solution of magenta.

362.—Sewage running into River Lune. Collected in sterilised bottle, April 8th, 3-20 p.m. Collected as it escaped from mouth of Sewer F. Much solid material, including faecal matter, passed out at intervals. The brownish sewage appeared to undergo a change of colour on becoming mixed with the River Water. At least one quarter of the width of the stream was discoloured by the sewage. The specimen collected was brownish in colour, alkaline in reaction, with an abundant brownish sediment.

363.—Soil from left bank River Lune. Collected in sterilised tin, April 8th, 4 p.m.; taken from a small branch of the river above Railway Carriage Works, at a level about 8 or 10 feet below the high Water Mark. It looks like a sandy loam. The bank of the river seemed clean, but when the water rises during high tides the effluent water from outlet A must back against it.

364.—Sand from the south Bank of River Lune, Collected by James Gornall (Head Water Bailiff), in sterilised tin, April 9th (morning), one mile below Cockersand Abbey Lighthouse.

365.—Sewage, collected on April 9th by Mr. J. E. Gee. This sample of sewage was collected as it escaped from Sewer F., for comparison with sample 362.

With regard to the soils the number of bacteria has been estimated by taking four grms. of soil in each case, washing it thoroughly in 40c.c. of sterilised water, and estimating the number of bacteria in various quantities of the water used for washing. After separation of the particles of soil by centrifugalisation, a portion only of the bacteria present in the soil would be obtained by this method, but these are the bacteria which would be the most important as sources of pollution of the water. The results are sufficiently comparable with each other. The numbers given represent a certain proportion of the bacteria per gramme of soil. I have been obliged to adopt this method of examining soil in order to avoid certain difficulties connected with the direct estimation of bacteria in the soil itself. It must be, however, remembered that the numbers obtained by this method are always smaller than those obtained by the usual method. This, however, is immaterial when the object of the examination is to obtain results comparable among themselves.

IV.—Results of Analyses made by Dr. Arthur Sellers.

The results of the bacteriological examination are tabulated under the following headings:—

IV.
Results of
Analyses
made by
Dr. A. Sellers

a. Total estimated number of Bacteria growing at 22° C.

b. Approximate number growing at 42° C.

c. Incubation test. In this test various quantities were incubated at 42° C. in peptone bouillon, and the appearance of the tubes noted after 24 hours incubation.

d. Search for organisms of the Bacillus Coli group.

e. Search for the Bacillus Enteritidis Sporogenes.

No.	Total number of bacteria growing at 22° c., in 4 days per cc.	Approximate number of bacteria growing at 42° c. per cc.	Incubation Test.	Organisms of the Bacillus Coli group.	Bacillus Enteritidis Sporogenes.
355—Water	10,500	32	Quantity taken, 1 cc. Turbid. Thick pellicle	Present in 1 cc.	Not found in 1 cc.
356—Water	145,000	84	Quantity taken, '5 cc. Turbid. Thick pellicle	Present in '5 cc	Present in '5 cc.
357—Mud	1,450,000	16	Quantity taken, '5 cc. Turbid. Dense pellicle	Not found in '5 cc.	Not found in '5 cc.
358—Deposit	325,000	16	Quantity taken, '5 cc. Turbid. Thick pellicle	Not searched for	Not searched for
359—Soil (contaminated)	1,225,000	Not tested	Not tested	Not tested	Not tested
360—Deposit	800,000	0	Not tested	Not tested	Not tested
361—Water	82,500	400	Quantity taken, '25 cc. Turbid. No pellicle	Present in '25 cc.	Present in '25 cc.
362—Sewage	95,000	Innumerable colonies in '1 cc.	Quantity taken, '1 cc. Turbid. No pellicle	Present in '1 cc.	Present in '1 cc.
363—Soil (control)	275,000	0	Quantity taken, 1 cc. Clear. Dense white pellicle	Not found in 1 cc.	Not found in 1 cc.
364—Sand (control)	275,000	0	Quantity taken, 1 cc. Very slightly turbid. No pellicle or sediment	Not found in 1 cc.	Not found in 1 cc.

V.—Results of Analyses made by Samuel S. Pickles, B.Sc.

V.
Results of
Analyses
made by
S. S. Pickles,
B.Sc.

365.—Sample of Sewage taken on April 9th, 1904, at the outlet of the 24 inch Main Sewer (Lune Road).

(At the time when this sample was collected the discolouration of the water observed on the previous day was not visible.)

Colour.—The sample was muddy or cloudy with considerable quantity of suspended matter, including tea leaves and currants—evidences of untreated sewage.

Smell.—In addition to a strong sewage odour (more particularly urine, very pronounced on warming), there was also a slight tarry odour.

Acidity.—The sample was distinctly acid. The acidity was entirely due to carbonic acid, and on removing this the reaction became alkaline.

Gas Works Products.—I examined the sample carefully for the presence of phenol, and also for sulpho cyanides, etc., but have been unable to get any indication of these bodies; benzene, naphthalene, anthracene, and pitch also are absent, or, if present at all, are only in exceedingly minute quantities. The tarry odour might be accounted for if the drains had contained these products at some previous date.

Soaps, Fats, Etc.—The sample contained a small quantity of fats as is generally the case with sewage.

Pink colour at outfall.—The sample examined had practically none of the pink colour which was observed in the river near the outfall.

GRAINS PER GALLON.

Chlorine.	Acidity.	Free Ammonia.	Alb. Ammonia.	Oxygen 3 mins.	Absorbed 4 hours.
16	All CO ₂	2·8	1·0	1·8	5·4

All these figures are high, and may indicate concentration of raw sewage or the presence of some trade refuse.

I took a sample of tap water, and determined the amount of dissolved oxygen it contained. Then nine volumes of this water were mixed with one volume of the sample, and the mixture was incubated for 22 hours, at 25° C., when the amount of dissolved oxygen was again determined.

Dissolved oxygen in water	6·86 ccs. per litre
Dissolved oxygen in mixture of water and sample, after 22 hours	·13 cc. per litre
Dissolved oxygen removed by sewage ...	<u>6·76 cc:</u>

or rather more than 98 per cent.

In conclusion, the sample submitted consists of concentrated sewage, and there are strong indications of the presence of trades refuse, very probably dyeworks effluent.

VI.—*Results of Experiments on Fish.*

VI.
Results of
Experiments
on Fish.

In order to ascertain whether the sewage, which apparently caused discolouration of the water, contained any poisonous substance which had escaped chemical tests, I carried out the following experiments with the assistance of Dr. A. Sellers :—

The Sewage 362 was diluted with pure water. The diluted fluid was kept in constant motion by an automatic arrangement, and small fishes (gold fish and roach) were placed in this fluid. The condition of the fish was then ascertained at intervals.

This experiment was repeated with three different dilutions of the sewage, viz., 1 in 10,000, 1 in 1,000, and 1 in 100; so that in each experiment the amount of sewage was greatly in excess of what could have occurred in the River, except quite near the sewer's outlet. After an interval of 48 hours in each case, the fish showed no evidence of discomfort or illness.

The same series of experiments was repeated with the sample of discoloured and highly polluted water (361), with the same results as those recorded above.

VII.—*Summary of Results.*

VII.
Summary of
Results.

A.

By comparing the *number of bacteria* present in the River water where it was flowing freely (355) with that found in the water thrown back against Bazil Point by eddies, incoming tide, and wind (356), it is clear that the latter is more highly polluted than the former. It was noticeable that light particles, paper, a greasy film and foam, which were absent in the main fresh water stream running along the left bank, were quite conspicuous on the bank under Bazil Point. This scum was, at the time of my visit, partly covering a large number of mussels. This confirmed entirely the statements made by local fishermen.

B.

The presence of the Bacillus Coli in both places showed that faecal pollutions of the water was still quite obvious near the mouth of the Estuary. This pollution was much more marked under Bazil Point than along the Crook Skear bank. The *Bacillus Coli* and *Bacillus Enteritidis Sporogenes* could easily be detected in $\frac{1}{2}$ cc. of Sample 356. Only the *Bacillus Coli* could be detected in 1cc. of Sample 355. The same bacteria were easily found in $\frac{1}{10}$ cc. of the Sample of Sewage (362a) taken for comparison, and in $\frac{1}{4}$ cc. of River water (361) taken in the neighbourhood of another sewer.

C.

It is to be noticed that the total number of bacteria growing at a low temperature in nutrient gelatine in the Samples of Sewage, and of Water highly contaminated with Sewage, was smaller than that of bacteria obtained under the same conditions from the water collected under Bazil Point (356). This apparent discrepancy can only be explained on the supposition that the *sewage contained a trade effluent* having strong antiseptic properties—a supposition which is supported by the colouration of the River water near the outlet of the sewer, and the smell observed at the time of collection. It is true that we failed to discover the nature of this product by chemical analysis, but I found on microscopical examination of the sediment separated from Samples 362a, that this sewage contained a very large number of yeast cells—a thing which is quite exceptional in ordinary domestic sewage.

D.

Taking as standards the Sample of Soil (363) collected on the left bank of the River near Skerton Weir, *i.e.*, above the chief sources of sewage pollution, and the Sample of Sea Sand (364) collected near the mouth of the Estuary where little pollution was likely to occur—it will be obvious that the mud under Bazil Point (357), the deposits collected on the opposite bank near the Stodday (358), and near the Lune Mills (360), as well as the soil obtained at the latter place a few feet below the high water mark (359), all show clear evidence of a marked excess of bacteria and, therefore, of some pollution.

To control the last results I had the amount of *combustible organic matter* present in these various soils estimated. The results obtained show that the amount of organic matter present in the stratified deposits, and in the mud deposited on the banks of the River below the sewer's outlets is greater, and in some places considerably greater than in the soil (363) collected above the sewers, or the sand (364) collected at a place where the shore was free from deposit.

E.

VIII.—*Conclusions.*

There was, at the time of my visit, clear evidence of faecal pollution of the banks of the River Lune, between Lancaster and the sea. VIII.
Conclusions.

This pollution was clearly evident at the level of Crook Skear, and still more along the Bazil Point Weir.

Mussels grown on the beds situated at these places are certainly exposed to faecal pollution which may at times become dangerous to health.

(I have not been able to obtain any clear evidence of the presence in the sewage investigated of chemical products liable to cause extensive poisoning of fish, but my observations do not exclude this possibility).

SHERIDAN DELÉPINE,

Director of the Public Health Laboratory,
Victoria University of Manchester.

29th April, 1904.

*To the Chairman and Members of the Midwives Act Committee
of the Lancashire County Council.*

Gentlemen,

I beg to submit a statement of action taken in carrying out of the provisions of the above Act during the three months ending April 6th, 1904. In accordance with your recommendation a short advertisement was inserted in February last in 56 of the principal newspapers circulating within the County to the effect that "every person desirous of practising in the Administrative County of Lancaster as a Midwife must forthwith send in her name to the Medical Officer, County Offices, Preston, from whom further information as to the provisions of the Act and the necessary forms can be supplied on application." These forms, seven in number, were drawn up and printed, together with the memorandum attached, explanatory of the provisions of the Act, and the steps to be taken in order to become certified. So far applications to be placed on the Register have been made by 354 persons residing in the County districts. Of these 49 hold Certificates of Examining Institutions recognised by the Board and 305 claim to be placed on the Roll as having been in *bonâ-fide* practice as Midwives for at least one year prior to the 31st of July, 1902, and in addition 96 persons residing in County Boroughs, who applied by mistake, were referred to their own Authorities.

The Central Midwives' Board have arranged with me to receive the Forms duly filled up by applicants, with other particulars and fees *en bloc*; so far 200 applications are now before the Board, and the Official Certificates will in due course be supplied to the County Supervising Authority for distribution. Under Section 10 of the Act, every certified midwife must, before commencing to practice or holding herself out as practising, give notice in writing, on the prescribed form, to the Medical Officer of her intention so to do, and under this provision 24 women have given the necessary intimation; so that particulars are now available concerning 378 midwives as practising in this County.

I also append a list of applicants showing the number from each of the County districts, and you will observe that from some of the districts comparatively few applications have been received.

Yours obediently,

EDWARD SERGEANT,

Medical Officer to the Midwives Act Committee.

County Offices, Preston,
April 7th, 1904.

MIDWIVES ACT, 1902.

Number of Applicants for Admission to the Roll of Midwives under
Section 2 of the Act.

DISTRICT.	Population.	No. of Midwives on List supplied by Medical Officers.	No. of Applications to be certified to date (5th April, 1904).
URBAN.			
Abram	6,556	5	3
Accrington (Borough)...	44,000	20	5
Adlington	4,597	5	1
Allerton	1,101	2	—
Ashton-in-Makerfield	19,605	14	12
Ashton-under-Lyne (Borough).	44,232	17	8
Aspull	8,380	11	6
Atherton	16,211	8	4
Audenshaw	7,419	12	1
Bacup (Borough)	22,500	8	4
Barrowford	5,000	1	—
Billinge	4,250	11	1
Birkdale	15,000	2	2
Bispham-with-Norbreck .	1,400	4	—
Blackpool (Borough)	52,174	44	3
Blackrod	3,900	3	1
Brierfield	7,500	2	—
Carnforth	3,050	—	—
Chadderton	25,400	19	6
Childwall	220	—	—
Chorley (Borough)	27,500	List not supplied.	4
Church	6,600	1	—
Clayton-le-Moors	8,300	2	3
Clitheroe (Borough)	11,500	1	1
Colne (Borough)	23,000	8	—
Crompton	13,500	10	5

DISTRICT.	Population.	No. of Midwives on List supplied by Medical Officers.	No. of Applications to be certified to date (5th April, 1904).
Croston	2,120	4	—
Dalton-in-Furness	13,020	12	1
Darwen (Borough)	39,114	19	4
Denton	15,347	14	4
Droylsden	11,300	List not supplied.	—
Eccles (Borough)	35,600	10	7
Falsworth	14,500	16	1
Farnworth	26,000	17	13
Fleetwood	13,000	6	4
Fulwood	2,932	List not supplied.	1
Golborne	7,000	9	1
Gorton	28,500	14	2
Grange	1,993	—	—
Great Crosby	8,044	1	—
Great Harwood	12,250	4	—
Haslingden (Borough)	18,543	9	2
Haydock	9,000	7	4
Heaton Norris	9,856	4	—
Heysham	3,374	1	—
Heywood (Borough)	25,915	17	6
Hindley	24,672	20	15
Horwich	15,614	8	4
Hurst	7,145	5	1
Huyton-with-Roby	4,661	List not supplied.	1
Ince-in-Makerfield	21,940	9	5
Irlam	4,700	6	1
Kearsley	9,400	14	6
Kirkham	3,693	3	2
Lancaster (Borough)	41,570	3	5
Lathom and Burscough	7,202	8	2

DISTRICT.	Population.	No. of Midwives on List supplied by Medical Officers.	No. of Applications to be certified to date (5th April, 1904).
Lees	3,660	4	3
Leigh (Borough)	43,000	17	4
Levenshulme	13,500	10	1
Leyland... ..	7,000	5	2
Litherland	12,280	9	1
Littleborough	11,257	14	7
Little Crosby	572	—	—
Little Hulton	7,294	4	3
Little Lever	5,230	8	6
Little Woolton... ..	1,091	2	—
Longridge	4,304	—	—
Lytham... ..	7,500	5	1
Middleton (Borough)	25,178	18	11
Milnrow	8,300	10	8
Morecambe (Borough)	11,931	5	2
Mossley (Borough)	13,498	13	3
Moss Side	27,316	3	1
Much Woolton	4,731	5	2
Nelson (Borough)	35,000	7	1
Newton-in-Makerfield... ..	17,710	17	8
Norden	3,907	6	3
Ormskirk	6,857	9	1
Orrell	5,436	4	2
Oswaldtwistle	14,500	5	4
Padiham	12,205	6	1
Pemberton	22,398	21	12
Poulton-le-Fylde	2,223	2	—
Preesall-with-Hackinsall	1,450	—	—
Prescot	7,855	6	2
Prestwich	10,285	2	—
Radcliffe	25,400	17	10
Rainford	3,333	6	—

DISTRICT.	Population.	No. of Midwives on List supplied by Medical Officers.	No. of Applications to be certified to date (5th April, 1904).
Ramsbottom	15,920	1	3
Rawtenstall (Borough) ...	31,250	16	5
Rishton	7,100	1	1
Royton	15,200	7	4
St. Annes-on-the-Sea	8,347	List not supplied.	1
Skelmersdale	6,200	5	3
Southport (Borough)	49,000	List not supplied.	4
Standish-with-Langtree ...	6,502	9	1
Stretford	32,290	13	—
Swinton and Pendlebury ...	27,400	8	6
Thornton	3,493	7	1
Tottington	6,118	7	—
Trawden	2,641	6	—
Turton	12,400	9	3
Tyldesley-with-Shakerley ...	15,500	9	4
Ulverston	10,060	2	1
Upholland	4,773	5	—
Urmston	7,100	3	—
Walton-le-Dale... ..	11,271	5	4
Wardle	4,100	1	3
Waterloo-with-Seaforth ...	25,175	8	1
Westhoughton	15,094	18	4
Whitefield	6,866	5	1
Whitworth	9,649	12	1
Widnes (Borough)	28,580	14	3
Withington	36,000	14	4
Withnell	3,349	3	—
Worsley... ..	12,748	12	8

DISTRICT.	Population.	No. of Midwives on List supplied by Medical Officers.	No. of Applications to be certified to date (5th April, 1904).
RURAL.			
Barton-upon-Irwell	8,484	4	1
Blackburn	8,238	7	—
Burnley	16,800	25	2
Bury	8,197	9	2
Chorley	19,700	3	6
Clitheroe (Lancashire portion)	6,725	—	—
Fylde	11,350	11	4
Garstang	10,436	2	1
Lancaster	8,865	List not supplied.	—
Leigh	8,569	7	2
Limehurst	10,338	16	3
Lunesdale	6,946	4	1
Preston	15,997	19	3
Sefton	10,272	List not supplied.	—
Ulverston	17,716	5	1
Warrington	11,059	17	9
West Lancashire	27,488	31	7
Whiston	19,460	List not supplied.	5
Wigan	6,105	19	—
County Boroughs.—Midwives giving notice of intention to practise in Administrative County			374
			4
		1,069	378

MEMORANDUM.

THE COUNTY COUNCIL FOR THE COUNTY
PALATINE OF LANCASTER.

MIDWIVES ACT, 1902.

Pursuant to Section 8 (7) of the Midwives Act, 1902, the Midwives Act Committee of the Lancashire County Council, to whom all the powers of the Council as Local Supervising Authority have been delegated, desire to draw attention to the provisions of the Act, which materially affect the legal position of all Midwives:—

1. From and after the 1st April, 1905, no woman may call herself a Midwife unless certified as the Act provides.

2. From and after the 1st April, 1910, no woman may practise (*i.e.*, habitually and for gain, attend women in childbirth otherwise than under the direction of a qualified medical practitioner), unless certified as the Act provides.

3. No woman shall be certified under this Act until she has complied with the rules and regulations laid down in pursuance of this Act.

4. No certified Midwife may employ an uncertified Substitute.

5. Any woman who, *before the 31st March, 1905*, claims to be certified under the Act may be so certified if—

(a) She holds a Certificate in Midwifery from the Royal College of Physicians of Ireland, or from the Obstetrical Society of London, or the Coombe Lying-in Hospital and Guinness's Dispensary, or the Rotunda Hospital for the Relief of Poor Lying-in Women of Dublin.

Or

(b) She holds such other Certificate in Midwifery as the Central Midwives Board may approve.

Or

(c) She satisfies the Central Midwives Board that she has been in *bona fide* practice as a Midwife for at least one year prior to the 31st July, 1902, and that she bears a good character.

6. A woman not included within one of these three classes will be required to pass the examination of the Central Midwives Board before obtaining a Certificate; the Fee for such Examination is One Guinea.

7. Applications to be certified as Midwives to practise in the Administrative County of Lancaster must be made to the **Medical Officer, County Offices, Preston**, in accordance with the rules and regulations prescribed by the Board, and accompanied with a Fee of Ten Shillings. Such applications, when in order, together with the Fees, will be transmitted to the Central Midwives Board.

8. The names of all certified Midwives will be entered on the Midwives Roll kept by the Central Midwives Board, a copy of which will be accessible for inspection at the County Offices, Preston, at reasonable times.

9. Every certified Midwife must, before commencing to practise or holding herself out as practising, give notice in writing, on the prescribed form, to the **Medical Officer, County**

7 MAY 1904

Offices, Preston, and must give a similar notice in the month of January in every year during which she continues to practise, and also notify at once any change of address or alteration of name by marriage.

10. A Midwife may be suspended from practice in order to prevent the spread of infectious disease, or may be removed from the Roll for disobeying the rules and regulations of the Central Midwives Board, or for other misconduct.

11. Penalties are prescribed for any infringement of the foregoing provisions (1), (2), and (9); also for obtaining a Certificate by false representation, or for wilful falsification of the Midwives Roll.

12. An appeal lies to the High Court of Justice from any decision of the Central Midwives Board removing a Midwife's name from the Roll, and to the Court of Quarter Sessions from any summary conviction for an offence under the Act.

Every woman practising as a Midwife should at once purchase—

- (a) A copy of the Midwives Act, 1902.
- (b) A copy of the Rules of the Central Midwives Board, framed under Section 3 of the Act.

These may be obtained from Messrs. Spottiswoode & Co., Ltd., 54, Gracechurch Street, London, E.C. (price 8½d., post free), or through any Bookseller.

Forms of Application can be obtained from the undersigned, and persons desirous of being placed on the Roll of Midwives must state on what grounds their claim to be certified is based.—[See paragraph 5 (a), (b), (c)].

EDWARD SERGEANT,

Medical Officer to the Midwives Act Committee of the
Lancashire County Council.

County Offices, Preston,
February, 1904.